7.2 ELECTRONIC ASSEMBLY AND WAVE SOLDERING OPERATONS

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Process Description

Electronic Assembly/Soldering is where electronic components are assembled and soldered onto printed circuit boards. The process steps include hand assembly, wave soldering, solder paste application with reflow oven, and solvent cleaning. Hand assembly is where components are manually assembled and soldered onto printed circuit boards. The process steps include flux application and hand soldering. Wave soldering is where components are soldered onto the printed circuit board by a wave soldering machine. The solder paste application with reflow oven involves the application of solder paste to pad locations on the printed circuit board through a stencil. Components are then surface mounted onto the printed circuit board with a pick and place machine. After inspection, the surface mounted components are joined to the printed circuit board inside the reflow oven. The potential of pollutants into the atmosphere are organic emissions from the use of solvents and solvent-containing materials.

The following equipment is typically exempt from permitting requirements:

Description of Equipment	Permit Exemption
Any flux application, hand soldering, wave soldering, solder paste application which meets the criteria of Regulation 2-1-103.	2-1-103
Any reflow oven used in conjunction with a solder paste application which meets the criteria of Regulation 2-1-103.	2-1-119.4.

This permit handbook chapter describes the permitting requirements and procedures for those electronic assembly and wave soldering operations which are not exempt from permitting requirements per Regulation 2-1-103. The potential of pollutants into the atmosphere are organic emissions from the use of solvents and solvent-containing materials.

Permitting of solvent cleaning is covered by other Permit Handbook Chapters such as Wipe Cleaning (6.3) and Vapor Solvent Cleaning (6.2).

Completeness Determination

The following District forms should be completed and fees provided for disc lubers. Use the Completeness Determination Checklist to verify completeness. Use the Data Form Guidance to ensure that the forms are completed correctly. Use the Fee Calculation Guidance to ensure that the fees are calculated accurately.

1. Form 101-B (one for facility).
2. Form S (one per source).
3. Material Safety Data Sheet for each solvent-containing material used, if it is a mixture of compounds.
4. If the electronic assembly and save soldering operations exhausts into add-on abatement device, Form A (one per device).
5. If Health Risk Screening is triggered, Form HRSA (one per source).
6. Fees, calculated per Regulation 3 (Schedule E).

Emission Calculations

Using the material balance method, for VOC-containing materials, the amount of pollutant emitted is often assumed to be 100 percent of the amount of pollutant contained in the material.

E lb POC/yr = [X gal flux/yr] x[Y lb flux/gal flux] x [Z lb POC/lb flux],

where,
E = Emissions of POC (lb/yr)
X = Maximum annual quantity of flux used (gal/yr)
Y = density of flux (lb/gal)
Z = POC wt fraction of flux (lb/lb)

Applicable Requirements

District Rules and Regulations

In general, electronic assembly and save soldering operations are subject to the operating standards of Regulation 8-1 and 8-4. The standards require that closed containers be used for disposal of cloth or paper impregnated with organic compounds; that closed containers be used for storage of organic compounds; and that evaporation of organic compounds during the cleaning of spray equipment be minimized. In addition, emissions are limited to 5 TPY per flux application and wave soldering operation.

Best Available Control Technology (BACT)

BACT for flexible and rigid disc manufacturing is specified in the BACT/TBACT Workbook. The following are applicable BACT requirements for:

Electronic Assembly & Wave Soldering Operations
- Wave Solder Operation - Flux Application and Finger Cleaning

Inform the BACT Coordinator of updates to the BACT/TBACT Workbook.

California Environmental Quality Act (CEQA)

Permit applications which are reviewed following the specific procedures, fixed standards and objective measurements set forth in this chapter (7.3) are classified as ministerial and will accordingly be exempt from CEQA review per Regulation 2-1-311.

In addition to the above-mentioned source-specific applicable requirements, other requirements may also be applicable depending on the facility, its application emissions, and its source location:

- ❑ Offsets
- ❑ Prevention of Significant Deterioration
- ❑ School Notification
- ❑ Risk Screening Analysis

Permit Conditions

Standardized conditions for electronic assembly and wave soldering operations are available from the Permit Condition Guidance. Refer to the Evaluation Report Template Guidance to obtain the Microsoft Word formatted permit conditions for this source category.